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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/937,721 09/25/97 GESSERT

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MM42/1007

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EXAMINER

ART UNIT	PAPER NUMBER
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DATE MAILED:
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Application No. 08/937,721	Applicant(s) Gessert
Examiner S. Mulpuri	Group Art Unit 2812

THE PERIOD FOR RESPONSE: [check only a) or b)]

- a) ☒ expires 6 months from the mailing date of the final rejection.
- b) ☐ expires either three months from the mailing date of the final rejection, or on the mailing date of this Advisory Action, whichever is later. In no event, however, will the statutory period for the response expire later than six months from the date of the final rejection.

Any extension of time must be obtained by filing a petition under 37 CFR 1.136(a), the proposed response and the appropriate fee. The date on which the response, the petition, and the fee have been filed is the date of the response and also the date for the purposes of determining the period of extension and the corresponding amount of the fee. Any extension fee pursuant to 37 CFR 1.17 will be calculated from the date of the originally set shortened statutory period for response or as set forth in b) above.

- ☐ Appellant's Brief is due two months from the date of the Notice of Appeal filed on _____ (or within any period for response set forth above, whichever is later). See 37 CFR 1.191(d) and 37 CFR 1.192(a).

Applicant's response to the final rejection, filed on 8/23/19 has been considered with the following effect, but is NOT deemed to place the application in condition for allowance:

- ☐ The proposed amendment(s):
- ☐ will be entered upon filing of a Notice of Appeal and an Appeal Brief.
 - ☐ will not be entered because:
 - ☐ they raise new issues that would require further consideration and/or search. (See note below).
 - ☐ they raise the issue of new matter. (See note below).
 - ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal.
 - ☐ they present additional claims without cancelling a corresponding number of finally rejected claims.

NOTE:

- ☐ Applicant's response has overcome the following rejection(s):

- ☐ Newly proposed or amended claims _____ would be allowable if submitted in a separate, timely filed amendment cancelling the non-allowable claims.

- ☒ The affidavit, exhibit or request for reconsideration has been considered but does NOT place the application in condition for allowance because:

ARGUMENTS ARE NOT CONVINCING.

- ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

- ☒ For purposes of Appeal, the status of the claims is as follows (see attached written explanation, if any):

Claims allowed: NONE

Claims objected to: NONE

Claims rejected: 1-2, 4-6

- ☐ The proposed drawing correction filed on _____ ☐ has ☐ has not been approved by the Examiner.

- ☐ Note the attached Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

- ☒ Other SEE THE ATTACHMENT

Attachment to the advisory action

Applicant amended the claims to limit p-type CdTe surface and dry etching technique. However, admitted Prior Art discloses forming solar cells from single crystalline materials, amorphous material or polycrystalline materials(see page 3, lines 1-9, page 12-20) and wet etching and dry etching (see page 6, lines 6-14).

Applicant argues that admitted prior art does not disclose a dry “etch process” from providing a uniform and reproducible surface of low-resistance electrical contact between metal layer and a layer polycrystalline p-type CdTe prior to additional contact interface or semiconductor layer to reduce contact resistance. However, modified invention of admitted prior art, as modified by the teachings of Schroen et al for Ar irradiation, Lee et al for aperture of 3 nm diameter and Ebe et al for angular irradiating of Ar on the target.


Admitted art teaches of forming solar cell metallization on II-VI semiconductor compound, could be p-type CdTe layer. Schroen et al et al is simply relied on Ar irradiation on surface p-type CdTe. It is agreed with applicant Schroen et al exemplifies the process with Si. However, Schroen et al clearly mention inventive concept of irradiation includes II-VI compounds.

Applicant argues that Schroen et al uses high voltage 1-10 keV which includes recite voltages.

It is agreed that Schroen et al grows silicon oxide, minimum of 10 angstroms, prior to metal formation. However, Schroen et al obtains synergistic advantage by both Ar irradiation and silicon oxide as well for reducing the contact resistance. However, Admitted prior art, as modified by Schroen et al, would completes, subsequent to irradiation of Ar, the structure forming metal on p-type CdTe.

Applicant argues that Lee et al uses external plasma gun and no reference to condition polycrystalline p-CdTe surface prior to deposition of an additional semiconductor layer. However, Lee et al is relied on the teaching of plasma apparatus with aperture diameter of 3 cm for bombarding Ar ions on substrate for effective Ar irradiation. It does not matter whether Lee et al uses glow discharge in the presence of inert gas, or forming oxide instead of metal or semiconductor layer, which are irrespective claimed language.

Applicant argues that teachings of Ebe et al is nonrelavent to the instant invention. However, the purpose of the Schroen et al and Abe et al is to reduce contaminants by using Ar irradiation. It does not matter whether the substrate is semiconductor or other, angle implantation of Ar is preferred, when taken the efficiency of sputtering into account Ebe et al further teach angle depends on the kind of inert ions and material of the substrate.



S. Mulpuri

Patent examiner

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